BIG RIVER

WATERSHED

INVENTORY AND ASSESSMENT

PREPARED BY:

KEVIN J. MENEAU
Fisheries Management Biologist
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For additional information contact:
St. Louis Fisheries Regional Supervisor
Lynn H. Schrader
St. Louis Regional Fisheries staff
2360 HWY D, St. Charles, Missouri 63304

EXECUTIVE SUMMARY

The Big River basin is located in east-central Missouri and drains 955 square miles of the Ozark plateau in portions of six counties. Big River has eight, order five tributaries and flows northward for 138 miles until it reaches the Meramec River.

The majority of basin land use is forest and pasture with some row cropping along stream bottoms. However, urbanization is rapidly increasing in the lower basin. Only 5% of the basin is owned by state and federal agencies. Surveys have found that local-users spend much time recreating (especially fishing) on and around Big River.

Basin streams exhibit typical Ozarkian characteristics: good water quality and fish habitat, and representative Ozark fish assemblages. Nineteen sensitive natural communities, including good examples of Ozark creeks and Ozark springs and spring branches are present. However, damage to some aquatic habitats and the potential for serious damage to several streams exists due to past lead and barite mining activity. Stabilization and reclaimation projects are beginning to address some of these problems. Unsafe mine dams and poorly-stored mine waste continue to degrade habitat or biota in about 110 miles of basin streams. The United States Army Corps of Engineers predicts catastrophic results from 27 high-hazard, unsafe dams during a moderate earthquake or major flood.

Riparian corridor habitat is fair to good, with Big River having slightly better habitat than tributary streams. About 75% of basin streambanks have either minimal or no erosion and are protected by trees or shrubs. Riparian corridors are negatively affected by riparian land use, especially along tributary streams.

Overall, stream habitat is good with rock slides, boulders, gravel, water willow, downed logs, and rootwads. However, eroded mine waste has buried aquatic habitats in some basin streams, leading to extirpation of some benthic invertebrates. This sediment is associated with elevated levels of heavy metals. Habitat quality is threatened by potential releases of mine waste. A fish consumption advisory for some fish species is present on Big River due to lead contamination. The basin exhibits good aquatic biodiversity. One hundred fish species, 34 mussel species, eight crayfish species, and 107 aquatic insect taxa have been found within the basin. Four fish and three mussel species are either endangered, rare, or on the State watch list.

Maintaining and improving species diversity and habitat quality will be the main focus of management efforts. Increasing stream recreational opportunities and educating the public will be stressed. To be successful, cooperation of landowners, volunteer organizations, and other governmental agencies will be needed.

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